RF EXPOSURE REPORT

Equipment under test Wireless Charger

Model name NAW-001

FCC ID 2APEP-NAW-001

Applicant Newscon Corporation

Manufacturer Newscon Corporation

Date of test(s) 2018.04.23 ~ 2018.05.12

Date of issue 2018.05.14

Issued to

Newscon Corporation
#922 9F Yaekyung Bldg., Olympic-ro 651,
Gangdong-gu, Seoul, Republic of Korea
Tel: +82-2-6953-1552

Issued by

KES Co., Ltd.
3701, 40, Simin-daero 365beon-gil, Dongan-gu, Anyang-si,
Gyeonggi-do, 14057, Korea
473-21, Gayeo-ro, Yeoju-si, Gyeonggi-do, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450

Test and report completed by :	Report approval by :
	
Young-Jin Lee Test engineer	Hyeon-Su Jang Technical manager

Revision history

Revision	Date of issue	Test report No.	Description
-	2018.05.03	KES-RF-18T0055	Initial
R1	2018.05.14	KES-RF-18T0055-R1	Add Electric Field Strength

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1. General information

Applicant	Newscon Corporation
Applicant address	#922 9F Yaekyung Bldg., Olympic-ro 651, Gangdong-gu, Seoul, Republic of Korea
Test site	KES Co., Ltd.
Test site address	3701, 40, Simin-daero 365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea 473-21, Gayeo-ro, Yeoju-si, Gyeonggi-do, Korea
Test Facility	FCC Accreditation Designation No.: KR0100, Registration No.: 444148
FCC rule part(s):	Part 15C
FCC ID:	2APEP-NAW-001
Test device serial No.	☒ Production ☐ Pre-production ☐ Engineering

1.1. EUT description

Equipment under test	Wireless Charger
Frequency	0.112 ㎒ ~ 0.181 ㎒
Modulation type	ASK
Model:	NAW-001
Antenna specification	Internal type(Coil antenna)
Power source	DC 9.0V

1.2. Test configuration

The **Newscon Corporation Wireless Charger FCC ID: 2APEP-NAW-001** was tested according to the specification of EUT, the EUT must comply with following standards and KDB documents.

FCC Part 15C
ANSI C63.10-2013
KDB 680106 D01 V03

1.3. Test frequency

		Frequency Range
Power source	DC 9.0 V	0.112 ㎒ ~ 0.181 ㎒

1.4. Test mode

Mode	Charging current	Description
Charging mode With load	90%	Using Max load
	50%	Using Mid load
	10%	Using Min load

1.5. Information about derivative model

N/A

1.6. Device modifications

N/A

1.7. Accessory information

Equipment	Manufacturer	Model	Serial No.	Power source
-	-	-	-	-

2. Environmental evaluation and exposure limit

Limits for Maximum Permissible Exposure (MPE)

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

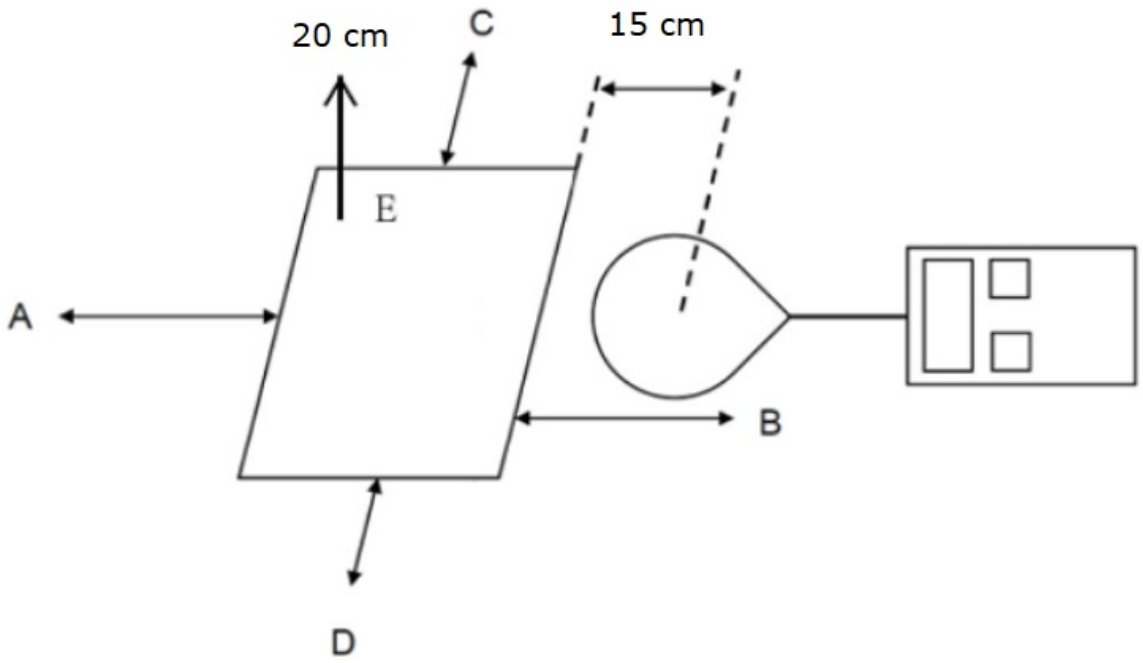
TABLE 1 - Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
(A) Limits for Occupational / Control Exposures				
0.3 - 3.0	614	1.63	*(100)	6
3.0 - 30	1842/f	4.89/f	*($900/f^2$)	6
30 - 300	61.4	0.613	1.0	6
300 – 1 500			f/300	6
1 500 - 100 000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	**614**	**1.63**	*(100)	30
1.34 – 30	824/f	2.19/f	*($180/f^2$)	30
30 - 300	27.5	0.073	0.2	30
300 - 1 500			f/1 500	30
1 500 – 100 000			1.0	30

Note.

1. f= frequency in MHz
2. "*" means Plane-wave equivalent power density

2.1. Test Setup



1. The test was performed on 360° turn table in anechoic chamber.
2. The probe was placed at distance 15 cm or 20 cm which is between the edge of the charger and the geometric center of the probe.
3. The highest emission level was recorded and compared with limit as soon as measurement of each point ; A, B, C, D, E were completed.
4. Point F is highest measured field from moving the probe around the device at distance 15 cm.
5. The EUT was measured according to the KDB 680106 D01v03.

Note.

Equipment Approval Considerations item 5.b) of KDB 680106 D01 v03.

a) Power transfer frequency is less that 1 ㎒.

- The device operates at a frequency of 112 ㎑ to 181 ㎑.

b) Output power from each primary coil is less than or equal to 15 watts.

- Output power from each primary coil : 9 watts.

c) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.

- The transfer system including a charging system with single coil. .

d) Client device is placed directly in contact with the transmitter.

- Client device is placed directly.

e) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

- The device is a mobile device.

f) The aggregate H-field strengths at 15 ㎝ surrounding the device and 20 ㎝ above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50 % of the MPE limit.

- Refer to following test results.

The EUT H-Field Strength levels at 15 ㎝ < 50 % of the MPE H-Field Strength limit 1.63 A/m

0.10 A/m (Max) < 0.815 A/m

2.2. Test results

- E-Field Strength from each edges the EUT

5W

Test Mode		Point A (V/m)	Point B (V/m)	Point C (V/m)	Point D (V/m)	Point E (V/m)	Point F (V/m)
Charging mode	10 % load	0.67	0.88	0.58	0.84	0.95	1.08
	50 % load	0.65	0.87	0.59	0.82	0.95	1.07
	90 % load	0.67	0.84	0.55	0.83	0.92	1.05

- H-Field Strength from each edges the EUT

Test Mode		Point A (A/m)	Point B (A/m)	Point C (A/m)	Point D (A/m)	Point E (A/m)	Point F (A/m)
Charging mode	10 % load	0.05	0.04	0.04	0.03	0.09	0.10
	50 % load	0.04	0.04	0.03	0.04	0.08	0.09
	90 % load	0.04	0.03	0.03	0.03	0.08	0.09

Appendix A. Measurement equipment

Equipment	Manufacturer	Model	Serial No.	Calibration interval	Calibration due.
Magnetic Field Sensor	HIOKI	0850-B1	3471	1 year	2018.06.12
Magnetic Field Hitester	HIOKI	FT3470-50	140430999	1 year	2018.06.12
Electric field probe	SCHAFFNER	EMC20	X-0028	1 year	2019.03.20

Peripheral device

Device	Manufacturer	Model No.	S/N	Note
AC/DC Adapter	WEIHAI PNTELECOM	MCS-H06KP	PB7Y0000322	Output Power : 9.0V / 5.0 V
10/50/90% Load	PNTELECOM CO.,LTD	N/A	N/A	N/A
Load	Newscon Corporation	N/A	N/A	N/A